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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/619,347	07/14/2003	F. Paul Silverman	VAL6131P0591US	6353

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WOOD, PHILLIPS, KATZ, CLARK & MORTIMER
Citicorp Center, Suite 3800
500 West Madison Street
Chicago, IL 60661-2511

EXAMINER

CLARDY, S

ART UNIT	PAPER NUMBER
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1617

DATE MAILED: 03/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/619,347

Applicant(s)

SILVERMAN ET AL.

Examiner

S. Mark Clardy

Art Unit

1617

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 20-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 20-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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New claims 20-25 are pending in this application which claims benefit of US Provisional Application 60/433,830, filed December 16, 2002.

Applicants' claims are drawn to methods of enhancing the herbicidal activity of photosystem II (PSII) inhibiting herbicides¹ by adding 2 to 22 moles of a salicylate (SA) or other Systemic Acquired Resistance (SAR) inducer² per mole of PSII herbicide (claim 19).

The objection of duplicate claims, and the rejections under 35 USC 112 are withdrawn in response to applicants' amendment filed January 3, 2006.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 20-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combined teachings of Klepper³ and Ryals et al⁴.

Klepper, again, teaches the combination of SA with PSII inhibiting herbicides, i.e., atrazine, bentazon, cyanazine, diuron, metribuzin, norea, phenmedipham, and prometryn (p. 175) in aqueous solution, with the test concentration of the PSII herbicide at 300 ppm or 0.03% (p. 174, "Materials", 2nd para). One of the stated goals was to determine whether SA could act as a synergist (p. 174, 2nd col, lines 1-5). Klepper concludes that while SA does act as a synergist (p. 178), other salicylates may be more persistent and therefore more practical or effective (p. 179).

¹ atrazine, bentazon

² hydroxypicolinic acid, acibenzolar (=BTH), dichloroisonicotinic acid, (di)chlorosalicylic acid compounds

³ Klepper. "Synergistic Levels of Nox Emissions from Soybean Leaves Caused by a Combination of Salicylic Acid and Photosynthetic Inhibitor Herbicides". *Pesticide Biochemistry and Physiology*. 32:173-179. 1988.

⁴ Ryals et al. "Systemic Acquired Resistance". *The Plant Cell*. 8:1809-1819. October 1996.

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As stated above, Klepper does not explicitly teach application of these combinations to plants as a method of enhancing herbicidal activity. It does, however, clearly suggest the herbicidal method in the paragraph bridging pages 173-174, wherein the accumulation of NO_x is discussed as the mechanism of action for the PI (i.e., PSII) herbicides: "NO_x evolution is closely related to intact leaf nitrite content. Free nitrite, nitrous acid, and free radical NO_x gases are highly toxic to basic plant metabolic systems." (footnotes omitted). Thus, while not testing the combinations on intact, live plants, Klepper clearly suggests that the application of SA will synergistically enhance the activity of PSII herbicides. Klepper does not appear to address the SAR activating characteristic of SA.

Ryals et al, again, teach that SA, acibenzolar (BTH), and other compounds are known activators of SAR. One of ordinary skill in the art of plant growth regulating compounds would be motivated to substitute the SA of Klepper with a compound such as acibenzolar because Ryals et al teach their equivalent activity in plants as SAR activators.

Thus, again, it would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to have combined SA or other SAR inducers such as acibenzolar, with PSII inhibiting herbicides such as atrazine or bentazon, because Klepper suggests the enhanced herbicidal utility of such compositions, and because SA and acibenzolar are both known signaling molecules which are useful for stimulating SAR in plants. The teachings of the prior art would suggest to the ordinary artisan that the biochemical signaling characteristics of SA and acibenzolar are interchangeable.

Determination of appropriate concentrations or ranges is within the skill level of the ordinary artisan.

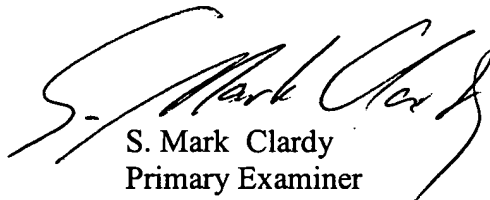
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No unobvious or unexpected results are noted; no claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to S. Mark Clardy whose telephone number is 571-272-0611. The examiner can normally be reached on 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sreenivasan Padmanabhan can be reached on 571-272-0629. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



S. Mark Clardy
Primary Examiner
Art Unit 1617

March 27, 2006